

Please amend the application as follows:

In the Claims

Please amend Claims 1, 13 and 20. Amendments to the claims are indicated in the attached "Marked Up Version of Amendments" (pages 5-6).

- B₁
1. (Amended) An apparatus for examining a region of a patient comprising:
- an x-ray radiation source that directs radiation through the region;
 - an optical storage element that receives radiation transmitted through the region at a storage region of the optical storage element, the storage region having a two dimensional surface area;
 - a light source that simultaneously illuminates the entire two dimensional surface area of the storage region of the optical storage element to induce a fluorescence emission of an image of the region from the storage region;
 - a two dimensional detector array optically coupled to the optical storage element such that the array receives the fluorescence emission at a plurality of pixels and generates an electronic representation of the tissue; and
 - a two dimensional optical coupling system that couples the image of the region onto the two dimensional detector array.

- B₂
13. (Amended) A method for examining tissue of a patient comprising the steps of:
- directing x-ray radiation through the tissue of the patient to produce a radiation pattern that is transmitted onto a two dimensional surface of an optical storage element, such that the optical storage element receives a two dimensional radiation pattern representative of the spatial distribution and intensity of the radiation pattern;
 - directing light simultaneously onto the entire two dimensional surface of the optical storage element to produce an optical signal representative of the spatial distribution and intensity of the radiation pattern; and
 - receiving the optical signal on a two dimensional detector array comprising a plurality of pixels and generating an electronic representation of the tissue.

20. (Amended) An apparatus for examining a patient's spine comprising:
- an x-ray radiation source emitting radiation which is directed through the spine;
 - an optical storage element having a surface area that receives the radiation transmitted through the spine;
 - a detector into which the optical storage element can be mounted comprising a detector array; and
 - a light source that can be optically coupled to the surface area of the optical storage element to simultaneously illuminate the entire surface area of the optical storage element to produce an optical signal that is transmitted onto the detector array.

Please add new Claims 21-26.

21. (New) The apparatus of Claim 1 wherein the x-ray radiation source comprises an x-ray tube.
22. (New) The apparatus of Claim 1 wherein the coupling system comprises an expander.
23. (New) The apparatus of Claim 22 wherein the expander comprises a fiber optic device.
24. (New) The apparatus of Claim 22 further comprising a filter positioned between the storage element and the expander.
25. (New) The apparatus of Claim 1 wherein the light source emits light having a wavelength longer than 800 nanometers.
26. (New) The apparatus of Claim 1 wherein the detector array is an amorphous silicon sensor.